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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,280	08/06/2003	Randy J. Zauhar	30/1183US	1384
7590 Box IP Department Suite 2000 500 North Broadway St. Louis, MO 63102			EXAMINER AGRAWAL, RITESH	
			ART UNIT	PAPER NUMBER
			1631	
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			05/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/635,280

Applicant(s)

ZAUHAR ET AL.

Examiner

Ritesh Agrawal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/13/07</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicants' amendment and request for reconsideration in the communication filed on 2/13/07 are acknowledged and the amendments entered.

Claim 12 is currently pending and under consideration.

The previous citation of the Zauhar webpage on the PTO-892 form enclosed with the Office action mailed 10/12/06 was in an improper format. A new PTO-892 containing proper citation information is enclosed with this action.

### ***Withdrawn Rejections***

2. The prior rejection of claims 1-11 under 35 U.S.C. 101, a non-statutory rejection is withdrawn in light of applicants' cancellation of the claims.

The prior rejection of claims 1-11 under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, an indefiniteness rejection, is withdrawn in light of applicants' cancellation of the claims.

The prior rejection of claims 1-4 and 7-11 under 35 U.S.C. 102(b) over Zauhar et al. is withdrawn in light of applicants' cancellation of the claims.

### ***Information Disclosure Statement***

3. The Information Disclosure Statement filed 2/13/07 has been entered and considered with the exception of the Meek reference. The Meek reference could not be considered because it does not contain page numbers, place of publication, nor

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publication date and these values could not be obtained from the provided reference copy. Initialed copies of the form PTO-1449 are enclosed with this action.

### ***Drawings***

4. Color photographs and color drawings are not accepted unless a petition filed under 37 CFR 1.84(a)(2) is granted. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and, unless already present, an amendment to include the following language as the first paragraph of the brief description of the drawings section of the specification:

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings and black and white photographs have been satisfied. See 37 CFR 1.84(b)(2).

### ***Specification***

5. The disclosure is objected to because of the following:

The use of the trademark PENTIUM has been noted in this application. It can be found, for example, on page 30 of the specification. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks. This

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objection is maintained from the prior office action. Applicants' are alerted to the fact that the Office's list of trademarks is exemplary. Applicants are instructed to thoroughly search the disclosure and amend all trademarks present therein.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

Applicants' have added claim 12 which recites the limitation "using said impact point of the prior iteration as said start point of the next iteration wherein said first direction associated with said new ray segment comprises the direction of reflection of said initial ray segment from said impact point" in lines 11-14.

Applicants have not pointed to specific support for this limitation, only stating that "no new matter is added by the new claim and the subject matter of the new claim is supported by the original specification, as filed," (remarks, page 7, 1<sup>st</sup> paragraph).

While the Office finds support for the use of using the impact point of the prior iteration (specification, page 8, line 2) there is no mention of using the direction of reflection of said initial ray segment. It is only stated that iteration is continued until a stopping condition is reached (specification, page 8, lines 1-3).

Applicants' new claim 12 recites the limitation "stopping said repeating prior to recording if said small area elements are both on the same atom in said plurality of atoms" in lines 15-17. Applicants have not pointed to specific support for this limitation. While the Office finds support for stopping conditions (page 14, 4<sup>th</sup> paragraph) and discarding trace information from the same atom (page 19, 2<sup>nd</sup> paragraph, lines 1-2), the Office is unable to find support for using this as a stopping condition as is suggested by the claim language.

Applicants new claim 12 recites the limitation "finishing said ray trace once a preselected number of ray segments have been recorded" in lines 21-22. While the Office finds support for stopping based upon the selection of a preselected number (page 14, lines 19-20 and page 15, lines 1-2), this is based upon the number of reflections, not the number of segments recorded. In fact, the specification suggests that the segments are recorded after finishing the trace (page 15, lines 1-2). Since the information is recorded after completing the trace, there is no measure of the number of ray segments recorded to serve as a finishing metric for the ray trace while the trace is still in progress.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is newly applied, but necessitated by applicants' amendment.

Claim 12 recites the limitation "providing a visualization of a molecule formed of a plurality of atoms with a determined solvent-accessible molecular surface" in lines 3-4. It is unclear if the molecule or the atoms are to have a determined solvent-accessible molecular surface.

Claim 12 recites the limitation "the direction of reflection of said initial ray segment" in lines 13-14. There is insufficient antecedent basis for this limitation in the claim. There is no prior reference to a reflection of said initial ray segment, or a direction obtained therefrom, in the claim. As applicants' own specification makes clear, reflection of the ray is not inherent as the ray may not be reflected but instead hit no element and head out to infinity (specification, page 14, last paragraph, line 7).

Claim 12 recites the limitation "the ray segment" in line 18. As there is prior recitation of multiple ray segments (e.g. "ray segment" and a "new ray segment") it is unclear as to which of the ray segments the limitation refers.

### ***Claim Objections***

8. Claim 12 is objected to because of the following informalities: Claim 12 recites the limitation "indicative of other molecules' shape" in line 26 and should be amended to

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recite "indicative of the other molecules' shapes." Appropriate correction is required.

This objection is newly applied, but necessitated by amendment.

### ***Conclusion***

9. No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ritesh Agrawal whose telephone number is (571) 272-2906. The examiner can normally be reached on 8:30 AM - 5:00 PM M-F.




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on 571-272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ritesh Agrawal, PhD RA

  
JOHN S. BRUSCA, PH.D  
PRIMARY EXAMINER